

February 27, 2008

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VIA ELECTRONIC TRANSMISSION

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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Re: Request for Continued Examination (RCE)
USSN: 10/787,407
Filed: February 27, 2004
Confirmation No.: 4536
Inventor(s): Masahiro Katsumura
Title: ELECTRON BEAM RECORDING SUBSTRATE
Attorney Docket No.: PC 3216.01 US

Dear Sir:

Enclosed for filing please find the following:

1. Request for Continued Examination Transmittal (PTO/SB-30);
2. Copy of Amendment & Response to Office Action dated February 27, 2008;
3. Petition for Extension of Time Under 37 CFR 1.136(a);
4. Cover Letter;
5. Electronic Patent Application Fee Transmittal; and
6. Certificate of Electronic Transmission.

Please acknowledge receipt of this transmittal.

Very truly yours,

PIONEER NORTH AMERICA, INC.



Caroline T. Do
Senior Patent Prosecution Attorney
INTELLECTUAL PROPERTY DEPARTMENT

CD:bp
Enclosures

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CERTIFICATE OF ELECTRONIC TRANSMISSION

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RESPONSE UNDER 37 C.F.R. 1.116
EXPEDITED PROCEDURE
EXAMINING GROUP 1795

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:
Masahiro Katsumura

Application No.: 10/787,407

Filed: February 27, 2004

For: ELECTRON BEAM RECORDING
SUBSTRATE

Examiner: Anca, EOFF

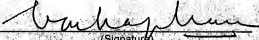
Art Unit: 1795

Confirmation No.: 4536

Docket No.: PC 3216.01 US

AMENDMENT AND RESPONSE UNDER 37 CFR §1.116

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Sir:

In response to the outstanding Final Office Action mailed December 04, 2007, please amend the above-identified Application as follows:

Amendments to the Claims are reflected in the listing of claims that begins on page 2 of this paper.

Remarks/Arguments begin on page 4 of this paper.

This listing of claims will replace all prior versions, and listings of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) An electron beam recording substrate where electron beam information recording is carried out comprising:

a substrate main body;

a resist film relative to the substrate main body; and

a surface layer area ~~including at least two layers of thin film in between the substrate main body and the resist film, wherein the layer adjacent to the resist film has a smaller average distance λ than the layer adjacent to the substrate main body, the layers are made of materials~~ a material containing at least one of elements with atomic numbers 21, 23, 25 to 36, 38 to 41, 43 to 48, 50 to 54, 56 to 72, 75 to 78, 80 and 82 to 83 by 50 wt% or greater that suppress suppresses enlargement of a scattering distribution diameter of electrons spread inside by irradiation of an electron beam from a resist film side.

2. (Original) The electron beam recording substrate according to claim 1, wherein the substrate main body is positioned on a side opposite to said resist film with respect to said surface layer area.

3. (Original) The electron beam recording substrate according to claim 1, wherein said electron beam recording substrate is made only of a same material as said material for said surface layer area.

4. - 5. (Cancelled)

6. (Currently Amended) The electron beam recording substrate according to claim 2, wherein ~~each layer of the at least two layers of said surface layer area is made of a material containing at least one of elements with atomic numbers 73 to 79 by 50 wt% or greater and~~ said substrate main body is made of a material containing at least one of elements with atomic numbers 13, 14, 21, 23, 25 to 36, 38 to 41, 43 to 48, 50 to 54, 56, 57, 72, 80 and ~~[[80]] 82~~ to 83 by 50 wt% or greater.

7. (Original) The electron beam recording substrate according to claim 2, wherein said surface layer area is comprised of a plurality of thin films.

8. (Currently Amended) The electron beam recording substrate according to claim 7, wherein that thin film in said plurality of thin films which is in contact with said resist film is made of a material containing at least one of elements with atomic numbers ~~[[73]] 75 to 78~~ ~~[[79]]~~ by 50 wt% or greater and those other than said thin film contacting said resist film are made of a material containing at least one of elements with atomic numbers 21, 23, 25 to 36, 38 to 41, 43 to 48, 50 to 54, 56, 57, 72, 80 and ~~[[80]] 82~~ to 83 by 50 wt% or greater.

9. (Currently Amended) The electron beam recording substrate according to claim 7, wherein that thin film in said plurality of thin films which is in contact with said resist film is made of a material containing at least one of elements with atomic numbers 21, 23, 25 to 36, 38 to 41, 43 to 48, 50 to 54, 56, 57, 72, 80 and ~~[[80]] 82~~ to 83 by 50 wt% or greater and those other than said thin film contacting said resist film are made of a material containing at least one of elements with atomic numbers ~~[[73]] 75 to 78~~ ~~[[79]]~~ by 50 wt% or greater.

REMARKS

Claims 1-9 are pending in the present application.

This Amendment is in response to the Office Action mailed December 04, 2007. In the Office Action, the Examiner rejected claims 3 and 9 under 35 U.S.C. § 112, second paragraph, and claims 1, 2, 4 and 7-8 under 35 U.S.C. § 102(b) and claims 3 and 5-6 under 35 U.S.C. § 103(a).

Applicant has cancelled claims 4, 5, and amended claims 1, 6, 8 and 9. Reconsideration in light of the amendments and remarks made herein is respectfully requested.

I. REJECTION UNDER 35 U.S.C. § 112

The Examiner rejected claims 3 and 9 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Applicant has amended claim 1, which is the independent claim of claims 3 and 9. Therefore, the rejection of claims 3 and 9 under 35 U.S.C § 112 is now moot. Applicant respectfully requests the rejection be withdrawn.

II. REJECTIONS UNDER 35 U.S.C. § 102

In the Office Action, the Examiner rejected claims 1, 2, 4 and 7-8 under 35 U.S.C. § 102(b) as being anticipated by or, in the alternative, under 35 U.S.C 103(a) as obvious over U.S. Publication No. 2002/0122995 filed by Mancini et al. ("Mancini"). Applicant respectfully traverses the rejections for the following reasons.

Mancini discloses that an etch-stop layer can be made of chrome (Cr has Z= 24) and a patterning layer can be made of molybdenum Mo (Z= 42), gold Au (Z= 79), tantalum Ta (Z=73), and tungsten W (Z=74). Unlike the present invention, Mancini, does not disclose, suggest, or render obvious that the etch-stop layer or that the patterning layer can be made of any of elements with atomic numbers 21, 23, 25 to 36, 38 to 41, 43 to 48, 50 to 54, 56 to 72, 75 to 78, 80 and 82 to 83 by 50 wt% or greater.

To support a 102 rejection, the Examiner must show that "each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." Verdegaal Bro. v. Union Oil Co. of California, 814 F.2d 628, 631 (Fed. Cir. 1987), (MPEP §2131). In addition, "[t]he identical invention must be shown in as complete detail as is contained in the ... claim." Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989), (MPEP §2131). Here the Examiner has not pointed out the specific language in Mancini that teaches the etch-stop layer or the patterning layer can be made of any of elements with atomic numbers 21, 23, 25 to 36, 38 to 41, 43 to 48, 50 to 54, 56 to 72, 75 to 78, 80 and 82 to 83 by 50 wt% or greater.

Applicant would like to point out to the Examiner that amendment to the claims is nothing more than to narrow the claims by combining all the elements in the dependent claim(s) to the independent claim and to disclaim all the 8 elements that are disclosed in the already cited reference(s). Since the amendment is in compliance pursuant to CFR § 1.116, this amendment should be entered. Applicant believes the claimed invention in condition for allowance.

Since there is no showing of the identical invention in as complete detail as is contained in the claim, Applicant respectfully requests that rejection under 35 U.S.C. §102(b) be withdrawn.

III. REJECTIONS UNDER 35 U.S.C. § 103

The Examiner rejected: 1) claim 3 under 35 U.S.C. § 103(a) as being unpatentable over Mancini et al. in view of U.S. Publication No. 2004/0053161 filed by Kanna et al. ("Kanna"); 2) claims 5 and 6 under 35 U.S.C. § 103(a) as being unpatentable over Mancini et al. in view of U.S. Patent No. 6,015,324 issued to Potter ("Potter") and U.S. Publication No. 2005/0053847 filed by Martin et al. ("Martin"). Applicant respectfully traverses the rejections for the following reasons.

Mancini further discloses that the etch-stop layer can also be made of indium-tin-oxide where In has $Z=49$ and that a substrate can be a quartz material, wherein quartz (SiO_2) contains 46.66% Si ($Z=14$). Kanna discloses a process of producing integrated-circuit elements using photoresist and that a transparent substrate, such as a glass substrate or an indium-tin-oxide can be used. Potter discloses that the etch-stop layer can be made of metals, such as Cr, Ta, and W. Martin discloses an opaque layer which can be chrome or layer made of tantalum compounds, such as Ta or TaN.

Mancini, Kanna, Potter, and Martin, taken alone or in any combination, do not disclose, suggest, or render obvious the etch-stop layer or the patterning layer can be made of any of elements with atomic numbers 21, 23, 25 to 36, 38 to 41, 43 to 48, 50 to 54, 56, 57, 72, 75 to 78, 80 and 82 to 83 by 50 wt% or greater. This

aspect of the invention is supported in the specification on page 9 (Table 1) and is recited in amended claims 1, 6, 8 and 9.

Therefore, Applicant believes that independent claim 1 and their respective dependent claims are distinguishable over the cited prior art references. Accordingly, Applicant respectfully requests the rejections under 35 U.S.C. § 102(b) and § 103(a) be withdrawn.

CONCLUSION


In view of the amendments and remarks made above, it is respectfully submitted that the pending claims are in condition for allowance, and such action is respectfully solicited. If it is believed that a telephone conversation would expedite the prosecution of the present application, or clarify matters with regard to its allowance, the Examiner is invited to contact the undersigned attorney at the number listed below.

The Commissioner is hereby authorized to charge payment of any required fees associated with this Communication or credit any overpayment to Deposit Account No. 04-1175.

Respectfully submitted,

PIONEER NORTH AMERICA, INC.

Dated: 2/25/08



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